ELK SUMMIT TALK –(FINAL)
KEN HAMLIN
12-08-07

History of the Elk "Problem" in Montana and how we ALL contributed.

I will cover some ancient and more modern history of elk in Montana that will, I hope, help illustrate how we arrived at our current situation. I will also briefly summarize some current elk research that is applicable. Then, at the end, I will wax philosophical for a few minutes based on my 34 years of participating in and observing wildlife management in Montana.

Along the way, I may, perhaps, upset every person in the room in some way. We have arrived at today's situation as a result of the actions and inactions of biologists, administrators, FWP Commission, legislators, hunters, ranchers, hobby landowners, outfitters, realtors, land developers, NGO-private non-profit conservation organizations and the regular citizen.

If I have left anyone out in this litany of responsibility, I apologize.

I am hoping that by all of us acknowledging the good that we and all other participants have done, and by acknowledging and facing responsibility for the contributions we have all made to the problems and conflicts that the stage will be set for problem-solving.

Nevada City, Montana 1864 – Early on, elk were killed for subsistence and as a commercial commodity as a source of income. At some times, elk hides were worth more than bison hides and elk were also shot just for their ivories to sell for (in today's $) large sums as fraternal ornaments. Under this commercialization, elk declined to a low point in numbers about 1910. – <u>Remember the concept of commercialization</u>.

Ovando 1910 – This picture was taken outside the Elk Bar in Ovando, Montana about 1910. Notice that there is not an antler in the bunch, but obviously proud and happy hunters. Elk were scarce.

This is also the time that establishment of Public Refuges/Preserves in Montana began to allow elk populations to grow. – <u>Remember the concept of Refuges and elk population growth</u>.

This is also the time that transplantation of elk into various parts of Montana began.

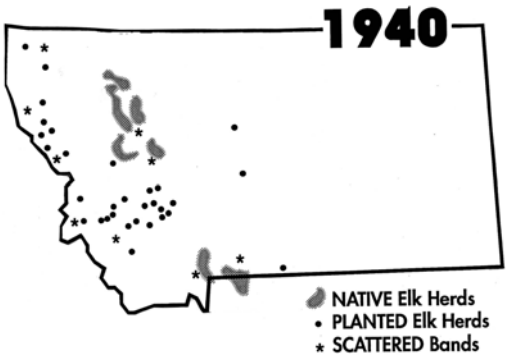
In 1937, FWP, sportsmen, and area ranchers started out (mostly with donated rancher stock trucks) to release 108 elk from YNP along Blacktail Ridge south of Dillon. A truck with 26 elk never showed up.

The next quarterly report noted that the truck had gotten, in parenthesis, "lost" and that the rancher had released the elk on his own place west of Dillon.

Now, if any of the ranching grandkids are here and figure out who this was, don't blame Grandpa too much. I am pretty sure elk would have moved over your way by now.

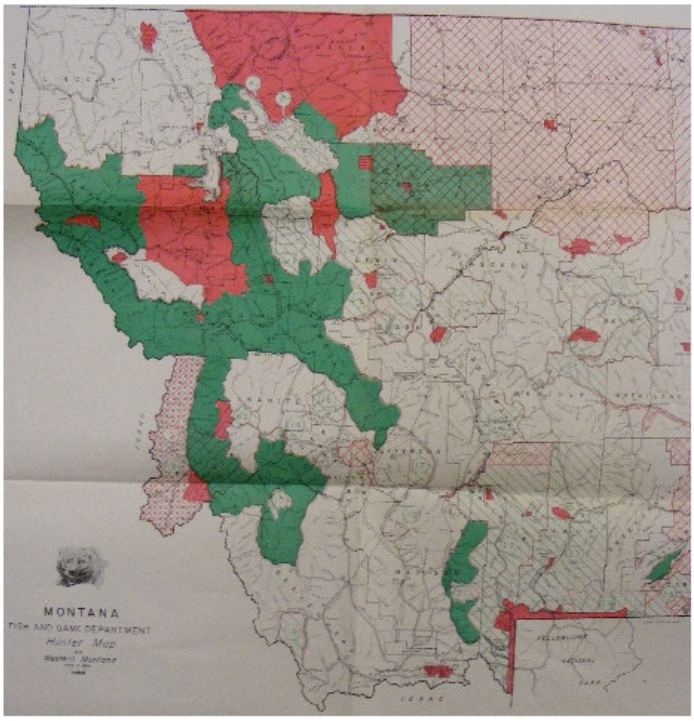
The point of this is: almost all Montanans were <u>interested in and helped with the restoration of elk.</u>

This is an early elk hunting camp before the age of Hummers and fancy European camp chefs.



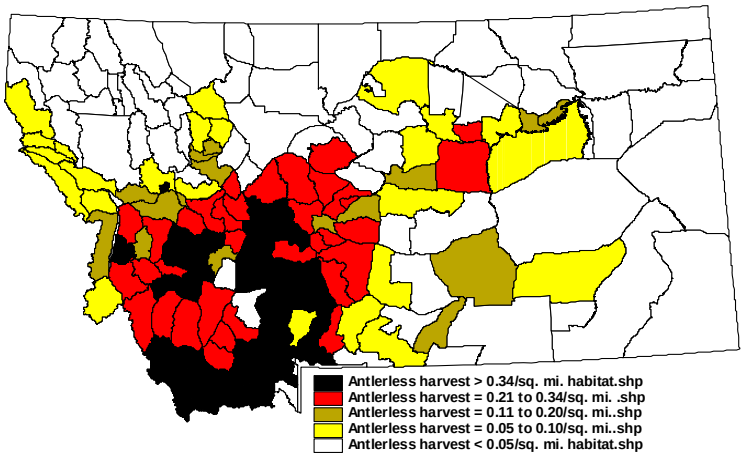
1940 – The increase in elk began about 1910, but was slow for a variety of reasons, including hungry people. In 1940, it was considered that there were really only 3 elk herds of any significance in Montana: the Flathead, the Sun River, and the Gallatin-Northern Yellowstone. The old-time historical outfitters were associated with these herds. Other than that, there were only scattered pockets of elk throughout Montana.

The real increase in elk started in the late 1940's associated with the breaking of the drought and WWII with it's rationing of tires, gasoline, and ammunition and siphoning off of young men for life and death hunting.



1945-46 – Don't pay attention to the red areas – they had to do with deer. The solid green areas were open to Either-Sex elk hunting (generally every year) and the lightly crosshatched green areas were open in some years (like this year) but closed in other years. Some of these areas were open season-long, but others had only 2 day – 1-week seasons.
*Note the lack of open elk seasons in SW Montana.

This represents distribution of antlerless elk harvest today. Distribution of bull harvest is similar. Most harvest today occurs where few elk ever existed in the 1940's.

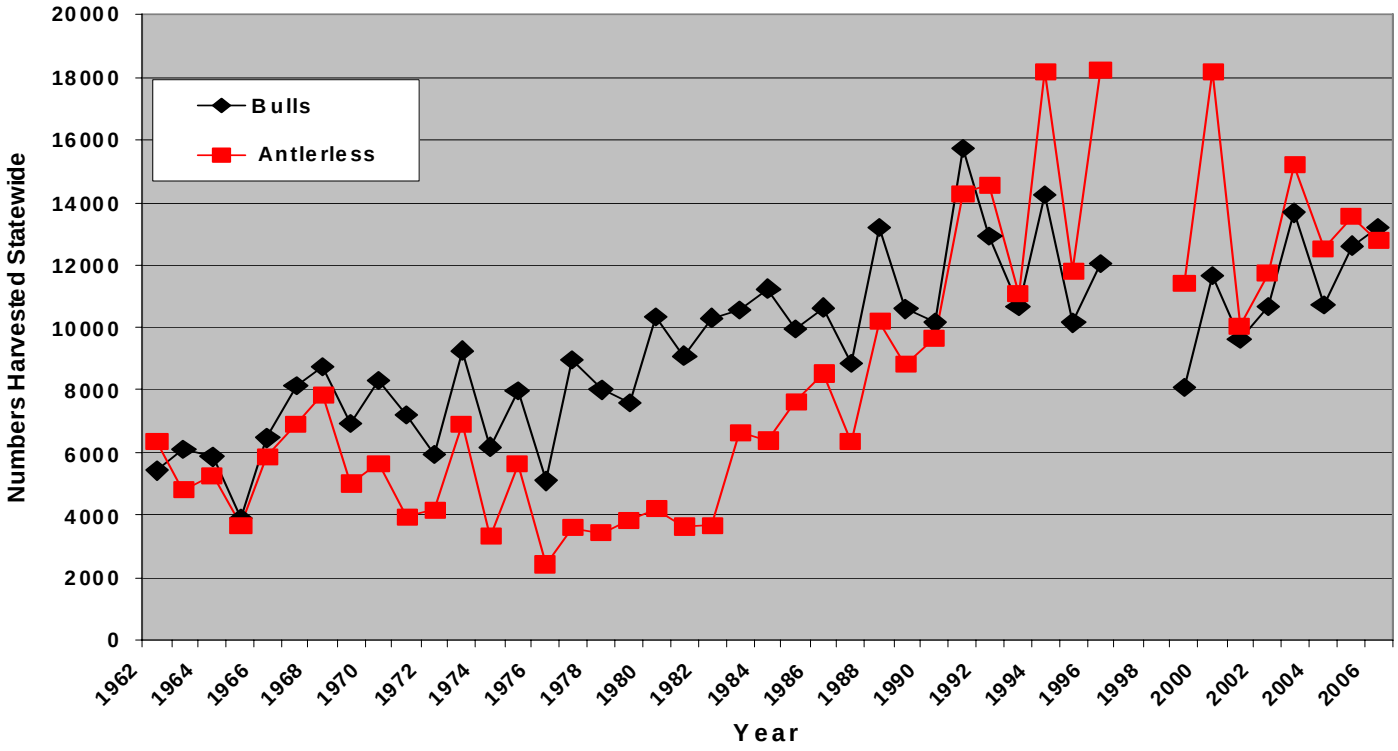


Between the late 1940's and mid-1960's there were a variety of regulations, but many seasons, in many areas were short, 2-7 days, until a quota was filled, or every other year. Except for the Flathead, Sun River and Gallatin/Northern Yellowstone the hunting outfitting business was an undependable source of income.

Statewide bull and antlerless elk harvest 1962-2006

Because harvest of bulls is open to anyone with a license, the harvest trend for bulls mimics the overall elk population level in a rough way if weather conditions and access are taken into account.

From the early 1960's to the early 1970's, elk hunting regulations in about 2/3 of the state were season-long either-sex hunting. Hunting access was pretty wide open and lots of cows and calves were harvested. This held overall elk populations pretty stable (see bull elk harvest stability 1960's – mid-1970's).



Then, also in this Figure, we see a large drop in the harvest of cows and calves in 1976.

I am pretty familiar with what was going on here because it relates to my first job of researching mule deer.

In the early-mid 1970's mule deer fawn survival and deer numbers declined all over the west and in Montana. MT Fish and Game continued to have mostly either-sex and 2 deer either-sex seasons because biologists assumed that fawn survival was poor due to poor nutrition and there were too many deer for the habitat. Many members of the public did not care for this response and several bills threatened in the 1975 Legislature to shut down deer season totally for anywhere from 1 to 5 years. Mostly bucks only seasons were rapidly adopted and the immediate crisis cooled down.

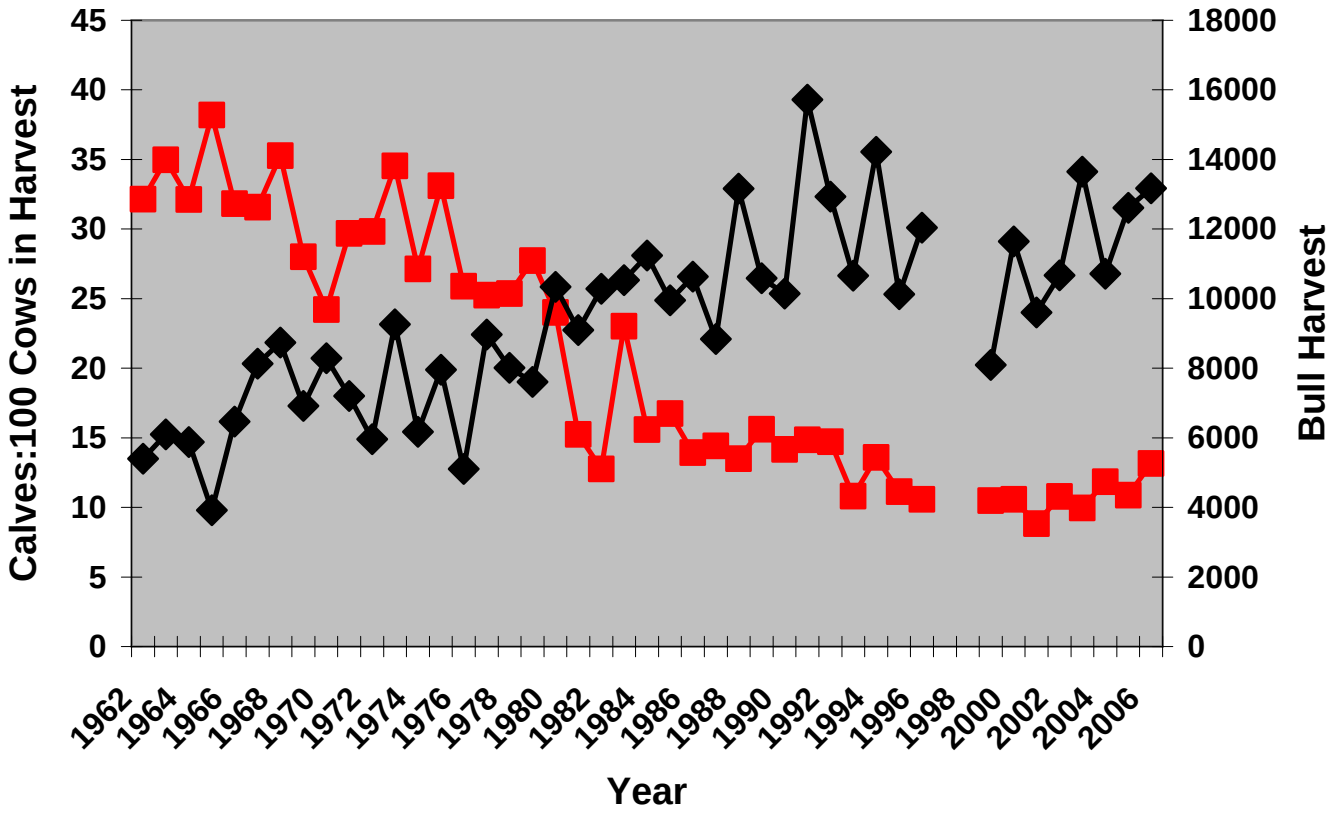
As a seemingly forgotten side light, at the same time, most ES elk hunting was shut down, with 1-week remaining in parts of the northwestern Montana and Sun River and most of the state went to bulls only with a very few antlerless permits.

As a result, elk populations began to grow.

- Unintended consequence, or NOT?
- But this is where the biggest increase in elk numbers started.

In 1983, after the recovery of mule deer, harvest of antlerless elk, primarily by increased permit levels, began and in most recent years antlerless harvest has again exceeded bull harvest. However, distribution of this kill has not occurred evenly across elk populations because of hunter access problems.

Bull harvest vs. calves: 100 cows in the harvest.



With increasing elk populations, harvesting an elk became a much less rare event. In fact harvesting a bull became relatively common, at least in southwestern Montana. The broad mass of hunters changed from shooting the first legal elk they saw to holding out for a bull for at least the first 4-weeks and 5-days of the season – and then it was too late.

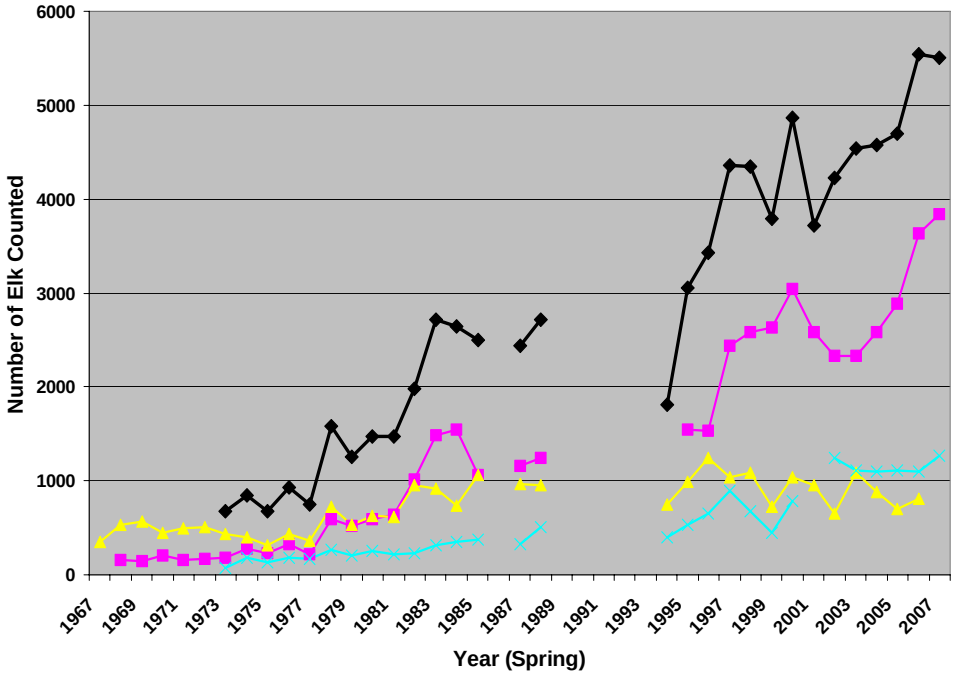
As a result of the increased opportunity to harvest a bull, the relative harvest of cows and especially calves, declined. Calf:100 cow ratios have not declined all across the state to the degree you see pictured in the Figure above. Rather, this portrays overall good hunting and increased 'pickiness' extending not only from cows over calves, but to bulls over both cows and calves.

The A-9/B12, second elk license is an attempt to overcome this by offering an antlerless opportunity with the hunter retaining the opportunity to harvest a bull.

There is less demand for antlerless elk than there used to be. In fact, I have some acquaintances who normally might be here today, but they are out trying to harvest a bull on public land during this extension.

That is the end of the general history and now on to 4 case studies. I picked these areas because they are all close to where we are meeting today and they illustrate problems, challenges and potential solutions that apply to many other areas.

Counts of 3 subpopulations – of elk during 1967-2007 - with the total in black.



First subpopulation (pink) –

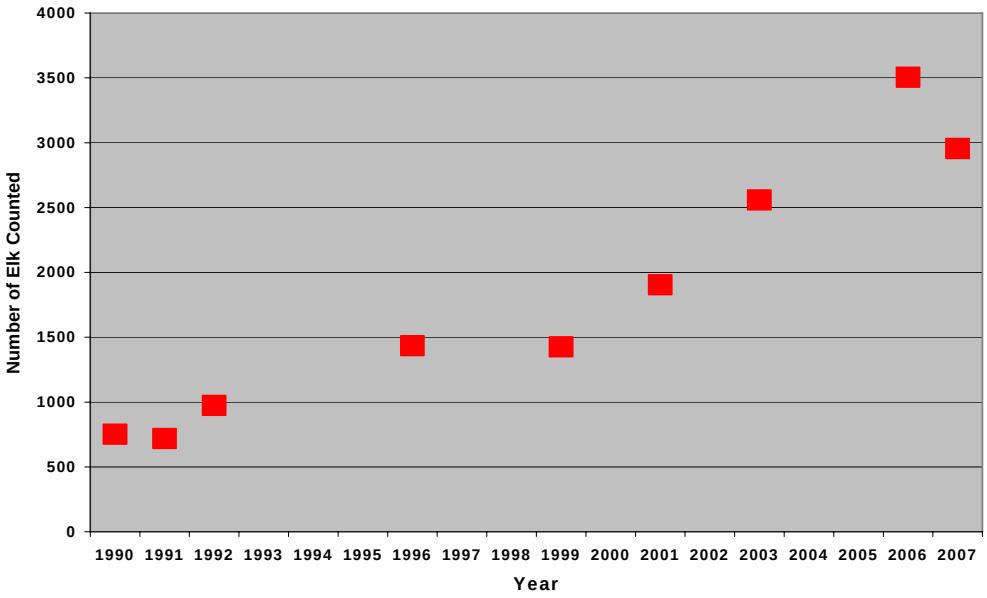
- The early landowner and ranch manager were interested in elk reduction, we harvested 300-400 antlerless elk out of approximately 1,500 total – up to 20 –25% antlerless harvest. This generally held the population stable during the 1980's and early 1990's.
- New landowner early 1990 – allowed no hunting
- A third, landowner, starting in 2001, allowed some hunting, but along with neighbors only tolerates limited numbers of hunters.
- This population is growing at an annual compounded rate of 7%.

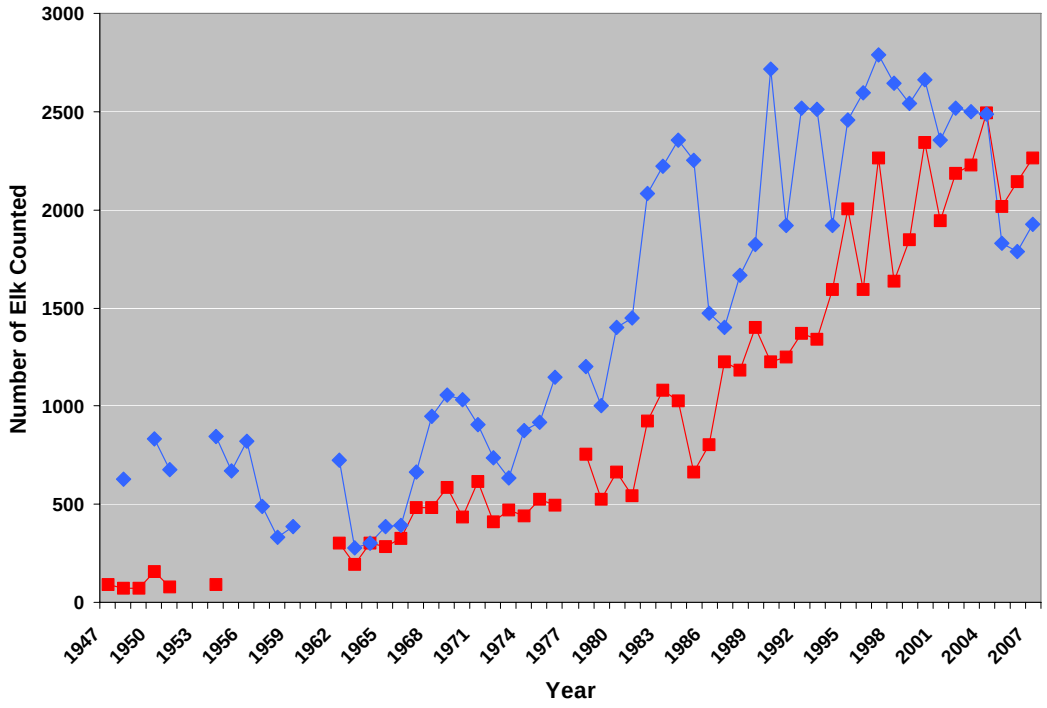
Second subpopulation (yellow) - The most public access of the subpopulations and with the most landowners interested in reducing the elk population, including one with a conservation easement that guarantees hunting access. This population is stable-to-declining.

Third subpopulation (light blue) is actually the fastest growing of the 3, increasing at an 8¼% compounded annual rate.

- In 1992, a change in ownership of a large area of summer/fall elk range in addition to winter range and access occurred. The public access provided by the previous owner was shut down. A large development including luxury homes began. NGO's and PNP groups provided some parcel owners with conservation easements for "protecting wildlife habitat". Of course these easements did not provide hunting/management access, so it is possible that the subsequent build up in elk numbers may destroy the preserved habitat. Later, access to lower elevations became controlled by exclusive outfitter hunting for bulls. Very few antlerless elk are shot and this is the fastest growing population segment.

Another elk population example very close to where we are meeting. This is almost entirely private land access with little harvest of antlerless elk and the elk population is showing rapid growth.



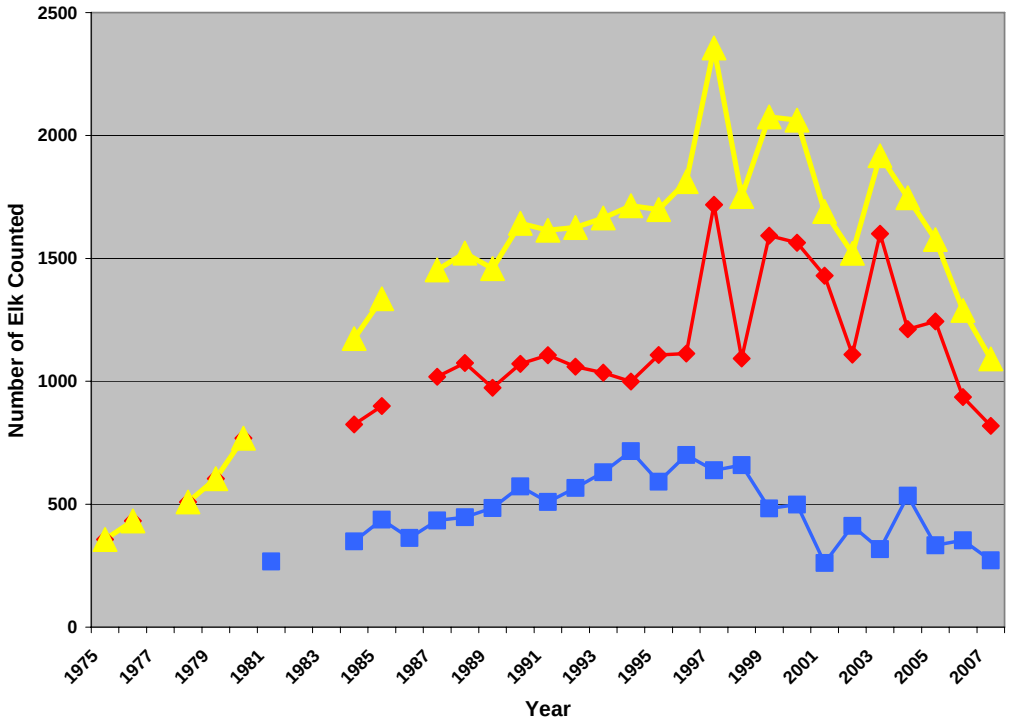


These 2 adjacent elk populations have mostly good public access for hunters. There is a long history of population increase, but with some evidence that population growth has slowed or stabilized recently.

Another 2 adjacent elk populations. The top line (yellow) is the total for the elk management unit. These areas have mostly good public access and very open access by the major private landowner trying to make a living by running livestock.

These populations are now slightly under Elk Plan objectives.

These case studies indicate that open public access for hunters is very important to controlling elk population level.



I think it is clear that all of us contributed to the recovery of elk populations in Montana and that in ways we may or may not have thought about contributed to the challenges we now face. I also think it is clear that hunting can reduce elk populations where that is the objective and there is equitable access for hunters.

I was also asked to briefly present results of some recent research I have been involved with along with any applicability it might have to the challenges of managing elk.

Recently, we have been taking advantage of technology to place GPS radio collars on elk and wolves that allow monitoring their location at frequent intervals. The GPS collars for elk are set to make contact with satellites every 30 minutes and by the signal being bounced back by different satellites at different locations, the location of the elk is triangulated and stored in a computer chip in the collar along with day and time of day. The collars have a drop-off timer that releases the collar from the elk at a pre-set time. We have been using 11-12 months because of the limitations of battery life combined with location fix interval.

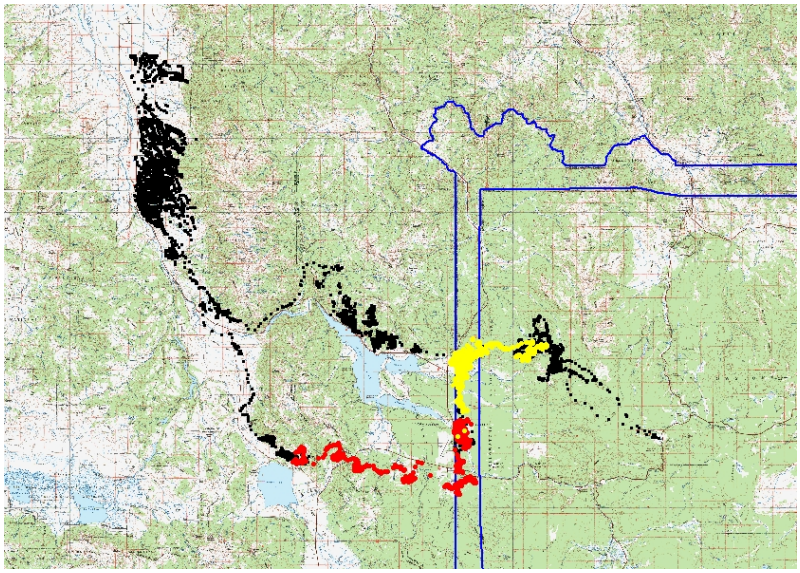
As I was saying, we go out and capture these elk.

Sometimes.

Actually most of the time – Here we see a successfully collared cow elk. These collars have provided about 15,000 – 18,000 locations of the collared elk in a year.

Because of a smaller collar and smaller battery, fix interval is set for every 3 hours in wolf collars.

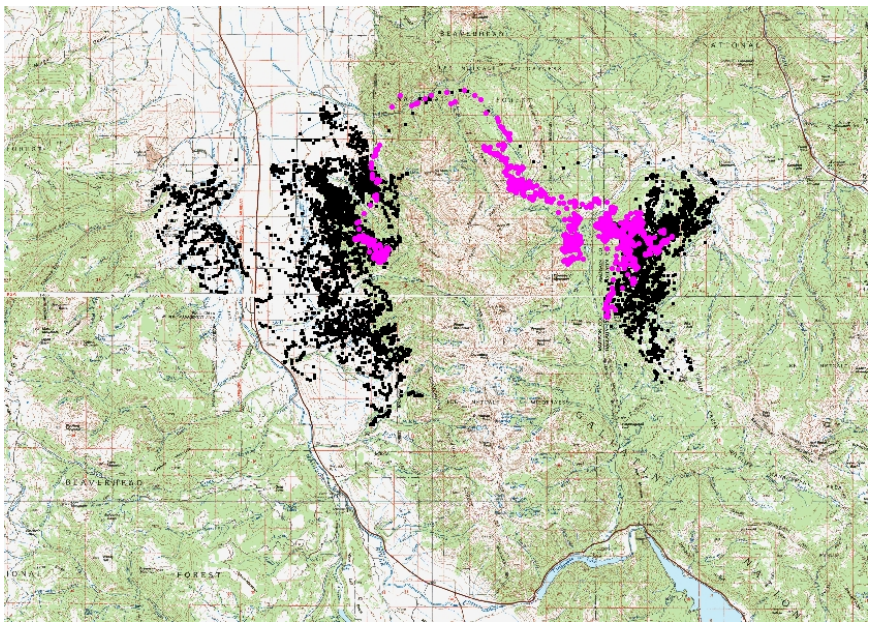
This study was conducted in cooperation with Dr. Bob Garrott of MSU and his student Jamin Grigg.



This particular cow elk was featured in the recent Montana Outdoors article on GPS technology – I will dig a little deeper into her private life here.

- The black dots in the northwest corner indicate the winter range of this cow. The north line of black dots indicates the path by which she moved to summer range in Yellowstone National Park.
- The yellow dots are where she spent time during the archery season in Montana, within the border of YNP.
- The red dots are where she spent time during the general big game season in Montana
  - She was vulnerable to hunting for 1 week during this time.
  - She spent the last portion of Montana's general big game season in Idaho, where no hunting season was occurring at that time.

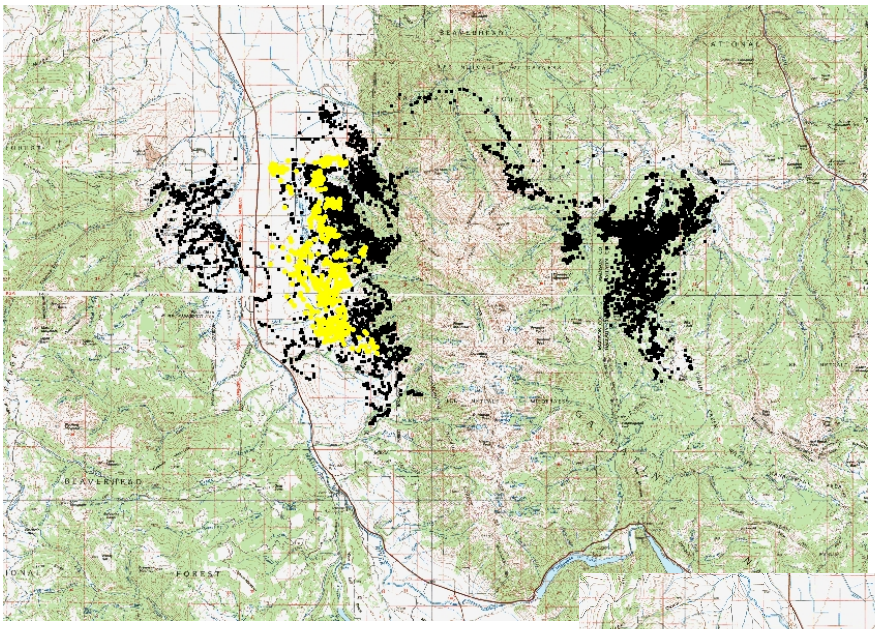
This elk was very effective at using PUBLIC LAND REFUGES.



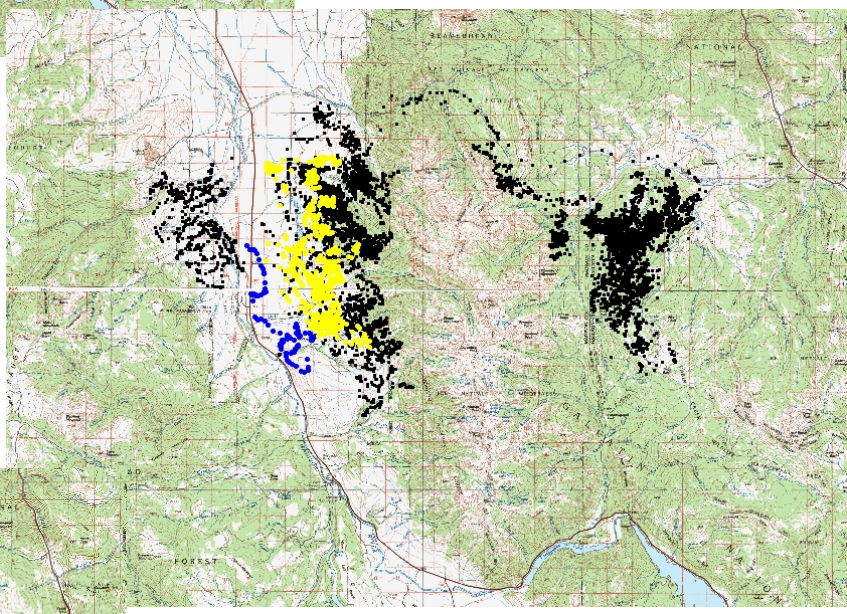
Here is one more example of many. The black dots indicate the yearlong range of this cow elk with the center clump being winter range and the right clump summer range.

- The pink/violet dots are her locations during archery season. Late in archery season, on October 8th, she moved back over the mountain onto public land with access blocked by private land. Some other examples for cow elk were earlier, by the 2nd week of archery season.

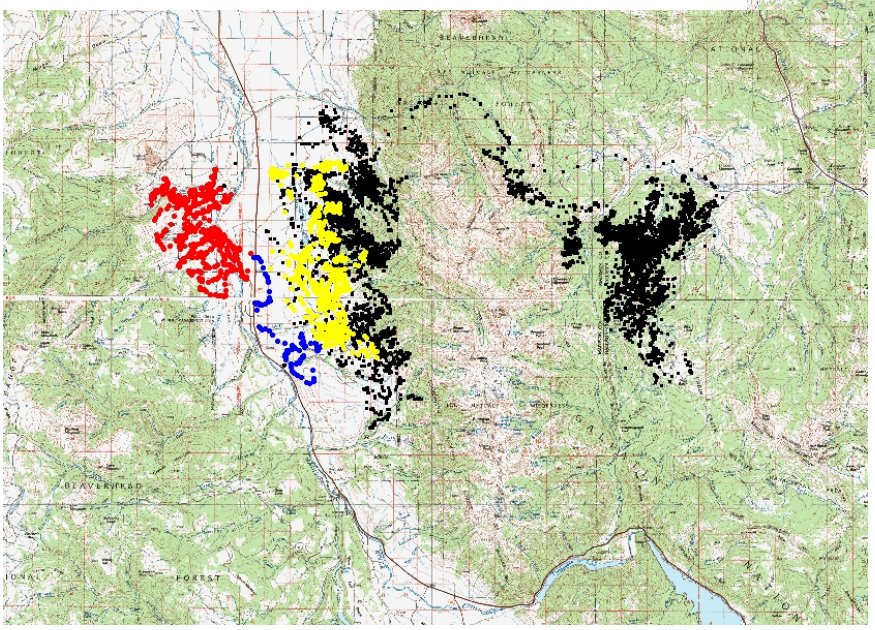
I will mention here that there are some other areas of the state where FWP biologists and some hunters are concerned that pressure during the archery season, along with OHV use of trails, is resulting in movement of elk from public land to private land refuges before the general elk season begins.



This elk then stayed on private land/access protected public land throughout the general season.
The yellow dots are her locations during the month of December, after the general season. She covered most of the winter range, during December; however, this area had a late hunt during January.



The blue dots are the locations of slippery Sally during the 4 days prior to the late hunt. The last blue dot you see crossing the highway into a non-hunting area was at 10:30 at night before the late season opened.



She spent the entire late season (red dots) as in effect, a public land refuge – the Wall Creek Wildlife Management Area.

What can we learn from these elk?

First, after being involved in literally spending millions of the hunters dollars over 34 years – I have determined that elk are smarter than a 5th grader and humans in general.

This may seem like a flippant conclusion and most of you will tell me you already know that. However, it is not a trivial conclusion with respect to some of our challenges.
Another thing I think we can learn is that postage stamp solutions on small pieces of private land with only a few cooperating landowner are unlikely to produce the results hoped for.

A final thing I think we take away from these couple of examples is that there are at least a few of you in this room that can be damned glad I haven't hung a GPS recording device on you and reported publicly.

Now for a little on the predation – wolf issue I was supposed to cover.

The analysis is not finished and I do not have time in this talk anyway to cover the interaction of elk and wolf movements based on the GPS collar information.

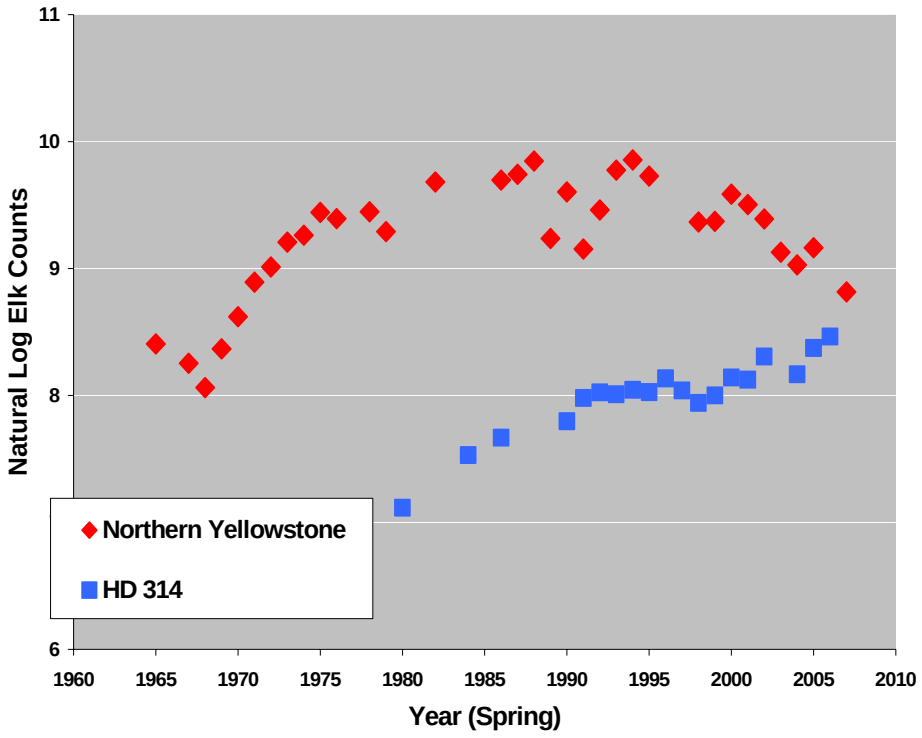
However, I will prepare you for what in this one area appears to be a likely conclusion. Although wolves cause some changes in elk behavior, group size, vigilance, and distribution, it is far less than that caused by their 2-legged competing predator – the human hunter.

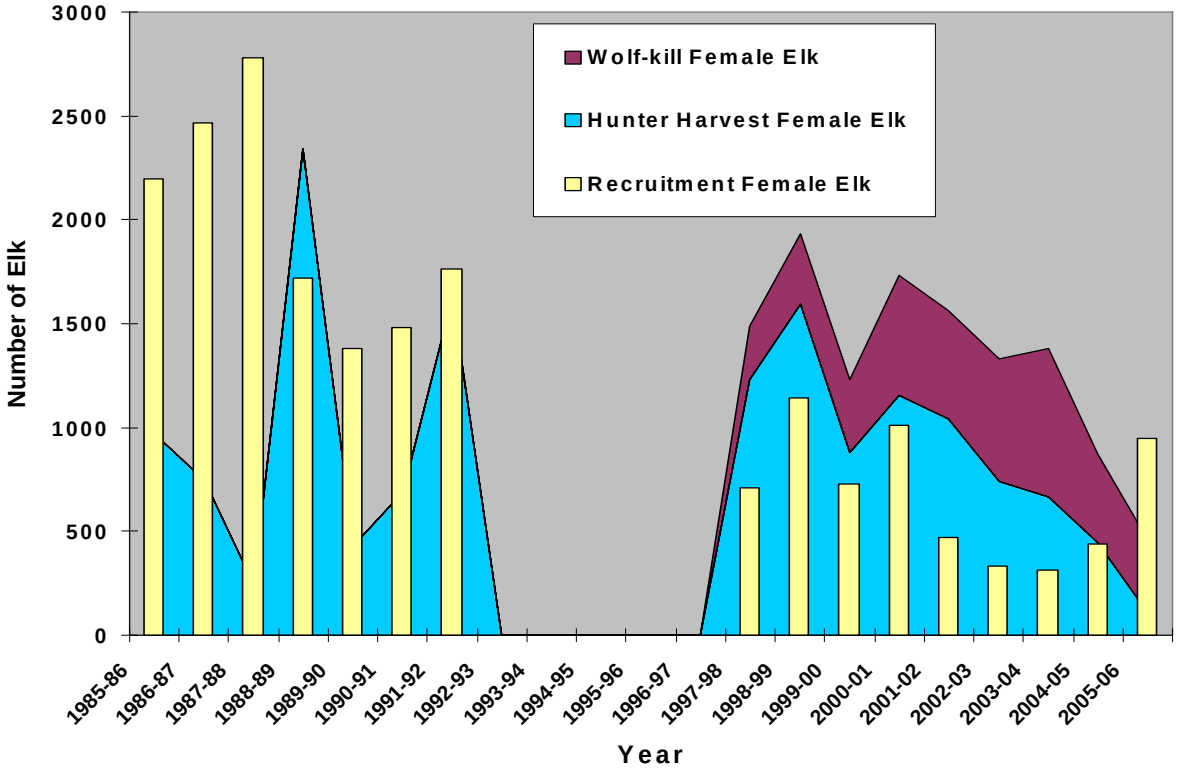
Again, in cooperation with Dr. Bob Garrott of MSU and his students and Dr. P.J. White, ungulate biologist for YNP, we are looking at wolf-elk relationships across a broad area of southwestern Montana and YNP that includes 7 different elk populations within 75 airline miles of each other.

These populations have all been subject to the same general regional trend of drought recently, but they differ significantly in other important influencing characteristics – especially – Predator #1, Predator #2 & Predator #3.

Contrast of Northern Yellowstone and HD 314 (Yellowstone Valley) – portions of the winter ranges are directly across the river from each other. Population trends are opposite, even though these areas are very close, with elk numbers declining in the Northern Yellowstone and increasing in the adjacent Yellowstone Valley. Hunter harvest and numbers of wolves and grizzly bears in relation to the number of elk have been higher for the Northern Yellowstone elk herd.

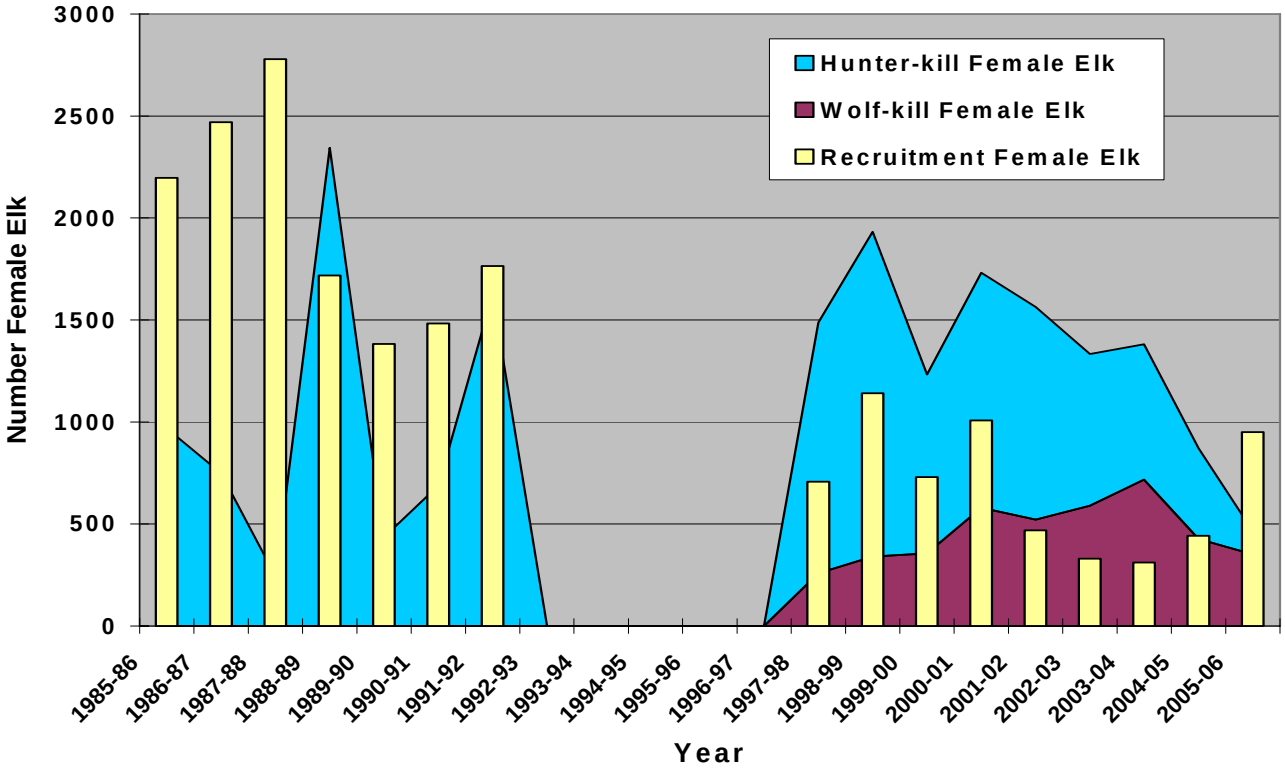
	Northern Yellowstone	HD 314
Hunter Harvest	Moderate – light	Light
Wolves:1000 elk	Moderate	Low
Grizzly Bear:1000 elk	Moderate	Low - moderate





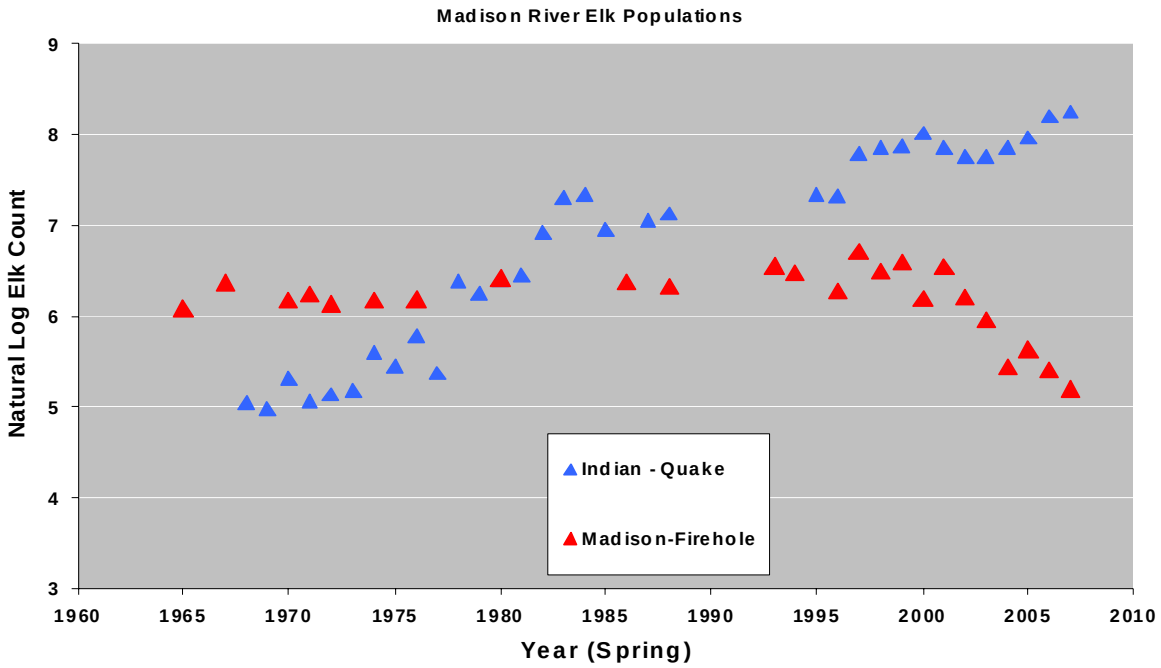
This first Figure compares hunter harvest (blue) with estimated wolf-kill (maroon) of adult female elk and also displays estimated recruitment of young female elk (yellow bars) into the Northern Yellowstone elk population during the pre- and post-wolf period. You can see that during the pre-wolf period, recruitment of new female elk exceeded hunter-kill of adult females and the population grew. During the post-wolf period, recruitment of new, young female elk declined and hunter harvest exceeded that recruitment in all years except 2006. Additionally, there was wolf-kill of elk that was not there earlier.

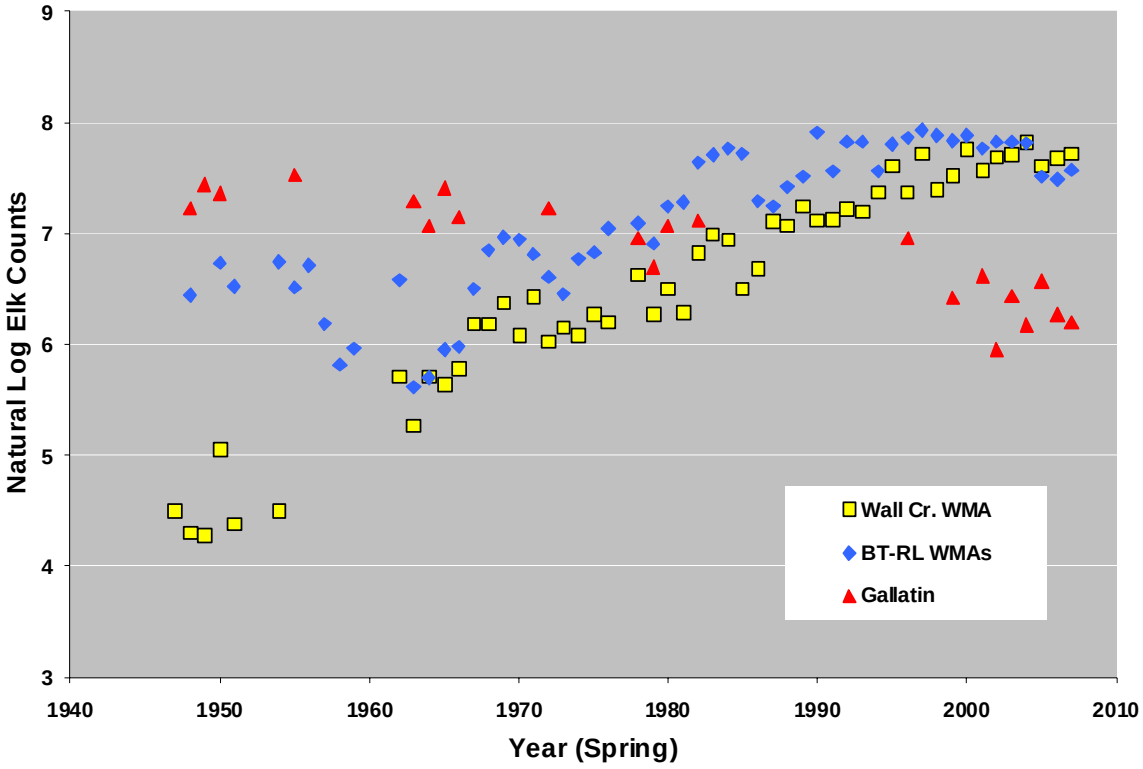
This is basically the same Figure, except that the level of wolf-kill of female elk has been placed directly behind the yellow recruitment bars for female elk to place wolf-kill in perspective. During 2001-02 through 2003-04, wolf-kill, by itself, exceeded recruitment of new female elk. In 2004-05, it equaled the recruitment rate. Together, hunting and wolf-kill exceeded recruitment of new elk in all years of the post-wolf period except 2005-06. Hunting was intended to reduce this elk population to objective level and it did so, along with wolf-kill. Hunting has now been reduced to insignificant levels.



The elk population in the Madison headwaters area of YNP (near Old Faithful, red triangles) and the elk population 30 airline miles away in the lower Madison Valley of Montana also display very different trends. The Madison headwaters elk population is declining despite no human harvest, but it does have the highest numbers of wolves and grizzly bear:1000 elk of all 7 of our study populations. The lower Madison Valley elk population is increasing with light human harvest and low numbers of wolves and grizzly bear:1000 elk.

	Madison headwaters	HD 362
Hunter Harvest	None	Light
Wolves:1000 elk	Highest of all areas per elk	Low
Grizzly Bear:1000 elk	Highest of all areas per elk	Low





Elk population trend for the Gallatin (red triangles) is declining while the trend for the Gravelly-Snowcrest populations (Wall Creek – yellow squares) and Blacktail-Robb-Ledford (blue diamonds) is stable to slightly declining. Although hunter harvest of antlerless elk has been ended (except for youth) since 2004 in the Gallatin, it was heavy earlier, relative to the number of elk present. Similarly, wolf and grizzly bear numbers relative to elk numbers are high in the Gallatin. Hunter harvest is relatively high in the Gravelly-Snowcrest Mountains, but wolf and grizzly bear numbers are low (wolves) or transient (grizzly bear), especially compared to other areas at this time.

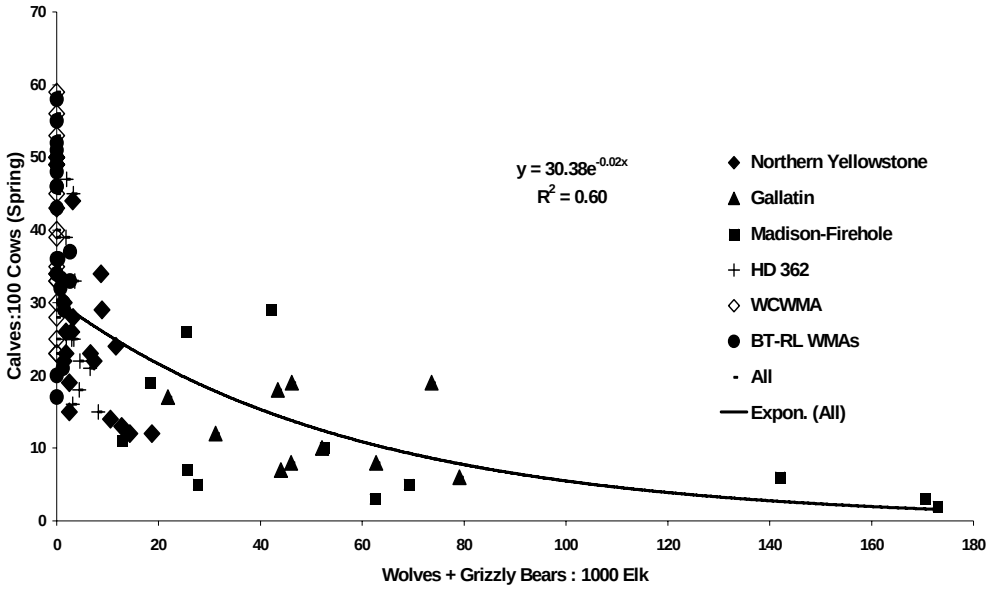
	Gallatin	Gravelly-Snowcrest
Hunter Harvest	High-low	Moderate to high
Wolves:1000 elk	High	Low
Grizzly Bear:1000 elk	High	none

There have been 3 different trends in elk populations within short distances of each other in southwestern Montana and YNP, decreasing, stable and increasing. Several things may explain these differences.

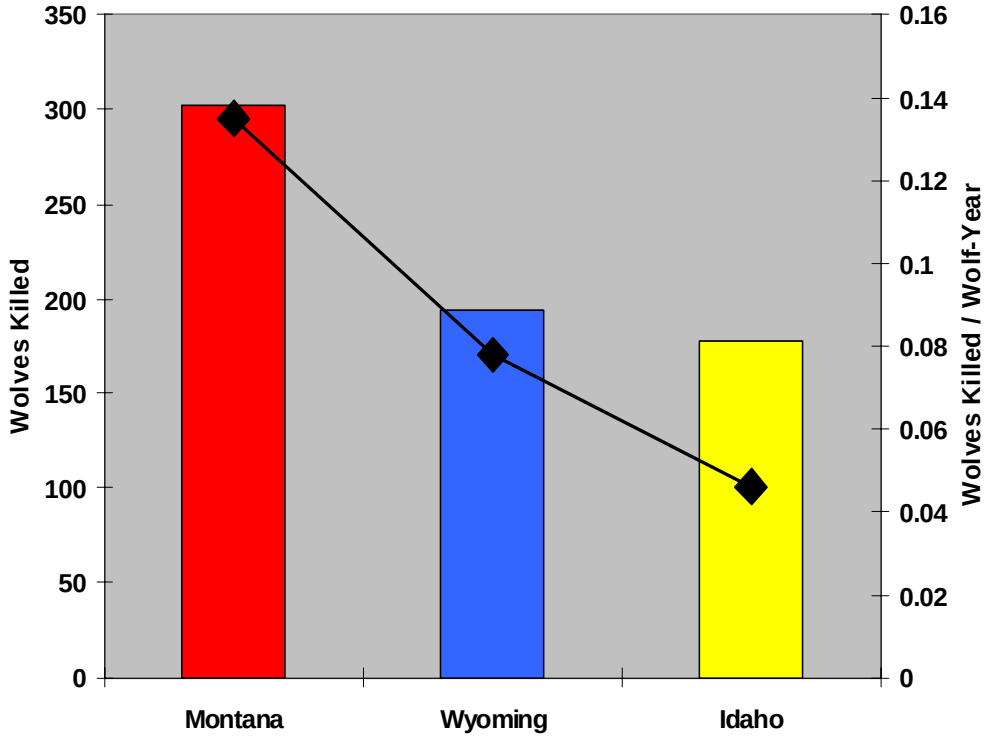
Adult female mortality has not changed in a big way on these areas, but the relative levels of human hunting and predation has shifted, especially in the Northern Yellowstone and Gallatin elk populations.

Remember I showed you earlier that there had recently been a large decline in the level of recruitment of young elk into the population on the Northern Range. That reduction in recruitment has also occurred in a big way in the Madison headwaters (YNP) and Gallatin elk herds and to a much smaller extent on the other areas.

One thing that appears to be important is the number of wolves and the number of grizzly bears in relation to the number of elk in the area. Where high numbers of these predators exist with relatively small elk populations, recruitment of new elk has been very low. The time of predation is different, with bears taking many calf elk between birth and about 1½ months of age. Wolves take more elk calves when they are older and moving around more.



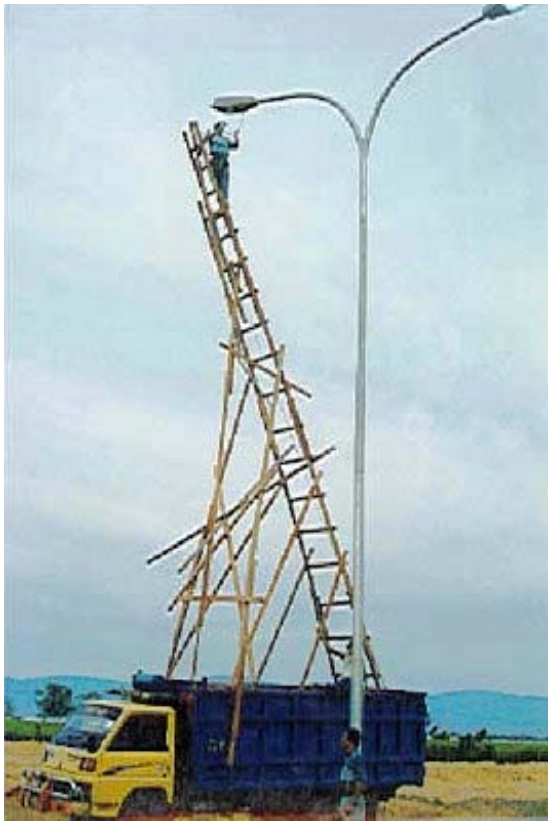
Thus, as we see in this Figure, the recruitment of new elk into the population declines exponentially as the numbers of wolves and grizzly bear:1000 elk increases. In the declining elk populations, not enough young elk are surviving to replace deaths of older elk.

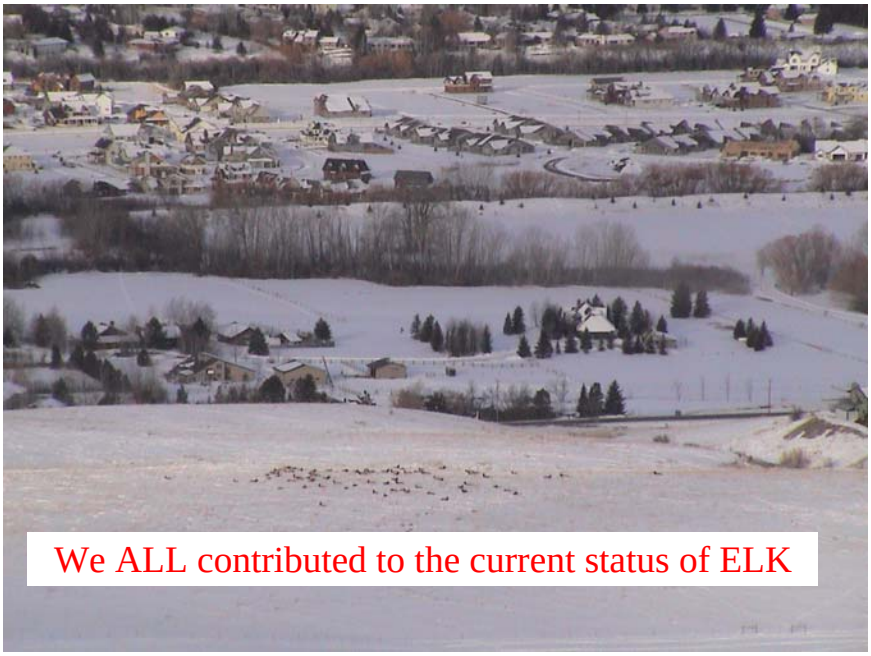


One of the reasons predator:prey ratios differ substantially among these areas is that in the agricultural valleys of Montana, we are killing a lot of wolves and so predator:prey ratios are unlikely to rise to the level where wolves will significantly impact elk populations in these areas. Montana has been controlling wolves at 3 times the rate of Idaho and 1.75 times the rate of Wyoming.

For those of you who did not get your elk this year, I want to show you a quick look at public land bulls shot by huntresses this fall.

To address the challenges of the current situation within the framework of allowable legal responses and consistent with the mission of the Department, a variety of approaches have been taken thus far. I designed a software program to search the files of my image collection for an illustration that closely matches where we are to day – Here's what it chose.





There have been great successes in elk management and everyone in this room and their forbearers can take credit for that.
Some of this success has also resulted in the management challenges of today.

The social and economic setting in which management has been conducted has constantly changed throughout history and we have to recognize those forces at work in Montana and the nation today.

Financial frustrations, the agricultural economy, threatened livelihoods, whether of the traditional rancher raising grass for sellable pounds of beef and facing threats of brucellosis or the outfitter fearing an altered operating environment, concentration only on our own important rights, whether the ownership and enjoyment of wildlife or private property rights, the over commercialization of the bull elk, conversion of what some of us perceive as Montana's heritage into 2nd, 3rd, 4th and 5th homes for rich part-timers who did not grow up and stay in low-wage Montana and quite frankly, in some cases, the love of money and power are all in play.

We are managing under two at least partially, conflicting laws/rights and this is also one of the roots of the problem.

These are the public ownership of wildlife and private property rights, both of which I personally firmly believe in. We all need to recognize that with rights come responsibilities.

To arrive at equitable solutions all parties need to come away with something they believe is better than the current situation.

Compromise must be mutual changes that lead to equitable solutions. Compromise will be necessary, but compromise cannot be the objective. What I mean that that is that I have seen compromises in population management arrived at and implemented that had no mathematical chance of success from day 1 and this could easily be determined. False compromise wasted valuable time.

Also unproductive for any party on any side of an issue is what I call negotiation by hostage taking. Most often the party you are trying to negotiate with has no legal or moral authority or ability to deliver your unrealistic demand.

Unfortunately, we do have individuals and groups contributing to problems who have no care about or desire or intention of being good neighbors.

Here, today, however, we have I believe, all people who are in attendance because they want and are willing to work toward solutions that may be imperfect, but are equitable.

Thank you for your time, patience and tolerance and good luck in the difficult work ahead of you.